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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,559	07/30/2003	Livio Ricciulli	0091-US-C3	8636
83579      7590      08/20/2010 LEVEL 3 COMMUNICATIONS, LLC c/o CPA Global P.O. Box 52050 Minneapolis, MN 55402				
EXAMINER NGUYEN, MINH CHAU				
ART UNIT 2445		PAPER NUMBER		
NOTIFICATION DATE 08/20/2010		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@cpaglobal.com

### Office Action Summary

**Application No.**

10/630,559

**Applicant(s)**

RICCIULLI, LIVIO

**Examiner**

MINH-CHAU NGUYEN

**Art Unit**

2445

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 55-68 and 73-86 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 55-68 and 73-86 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/GS-08)  
Paper No(s)/Mail Date 6/4/10, 1/11/10
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This action is responsive to the amendment of the applicant filed on 6/4/10.

Claims 55-68, 73-86 are presented for further examination.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 55,57-61,63-68,73-82,85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al. (Kano) (US 6,310,858), and in view of Callon et al. (Callon) (5,854,899).
2. Claim 55, Kano teaches a method for transmitting content in a communications network, the method comprising:

(A) configuring a table (i.e. routing table 21A) to cause content to be routed over a first path (i.e. a path is corresponding to a destination address for routing) in said communication network (i.e. network 1) [figure 6, col. 1, line 31-col. 2, line25; and col. 8, lines 22-54];

(B) analyzing whether a specified amount of time has elapsed relative to the transmission of content via the first path [col. 1, line 31-col. 2, line25; and col. 8, line 22-col. 9, line 24]; and

(C) based at least in part on the analyzing step (B), modifying the table to cause content to be routed in said communications network [col. 1, line 31-col. 2, line25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21].

Kano fails to teach content is routed over a second path. However, Callon, in the same field of endeavor having closely related objectivity, teaches content is routed over a second path (i.e. it is considered as an alternative path) [col. 16, lines 31-38].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Callon's teachings of content is routed over a second path, in the teachings of Kano in routing system, for the purpose of help to manage paths in a manner that provides for efficient network operation and minimizes the delay when forwarding data.

3. Claim 57, Kano and Callon disclose the invention substantially as claimed. Kano teaches wherein the modifying step (C) is performed if the specified amount of time has elapsed since the transmission of content began on the first path [Kano, col. 1, line 31-col. 2, line25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21].
4. Claim 58, Kano and Callon disclose the invention substantially as claimed. Callon teaches wherein the modifying step (C) comprises: designating a neighboring

node in the second path as a next hop [Callon, col. 7, lines 15-29, line 50-col. 8, line 26].

5. Claim 59, Kano teaches a node in a communications network, the node comprising:

a first port (i.e. port #1) operable to receive content destined for a destination node in the communication network (i.e. network 1) [figures 4 & 6, col. 1, line 31-col. 2, line 25; and col. 8, lines 22-54];

one or more output ports (i.e. port #2) operable to transmit content to at least a first path (i.e. a path is corresponding to a destination address for routing) in said communications network (i.e. network 1) [figures 4 & 6, col. 1, line 31-col. 2, line 25; and col. 8, lines 22-54]; and

a table (i.e. routing table 21A) configurable to cause content received at the first port to be selectively transmitted from the one or more output ports to either the first path in response to instructions derived from an analysis of an amount of elapsed time during which the table has been configured such that content has been transmitted from the one or more output ports to a current path [figure 6, col. 1, line 31-col. 2, line 44; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 44].

Kano fails to teach content is routed over a second path. However, Callon, in the same field of endeavor having closely related objectivity, teaches content

is routed over a second path (i.e. it is considered as an alternative path) [col. 16, lines 31-38].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Callon's teachings of content is routed over a second path, in the teachings of Kano in routing system, for the purpose of help to manage paths in a manner that provides for efficient network operation and minimizes the delay when forwarding data.

6. Claim 60, Kano and Callon disclose the invention substantially as claimed. Kano teaches wherein the analysis involves comparing the amount of elapsed time against a threshold amount of time (i.e. a predetermined value of time) [Kano, col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21].

7. Claim 64, Kano a method for transmitting content in a communications network, wherein a table entry is configured to cause content to be transmitted via a first path in said communications network, the method comprising:

(A) comparing an elapsed time associated with transmitting content via the first path with a threshold amount of time (i.e. a predetermined value of time) [col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21]; and

(B) modifying the table to cause content to be transmitted in said communications network as a result of the comparing step (A) when the elapsed time associated with transmitting content via the first path exceeds the threshold amount of time [col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21].

Kano fails to teach content is transmitted over a second path. However, Callon, in the same field of endeavor having closely related objectivity, teaches content is transmitted over a second path (i.e. it is considered as an alternative path) [col. 16, lines 31-38].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Callon's teachings of content is transmitted over a second path, in the teachings of Kano in routing system, for the purpose of help to manage paths in a manner that provides for efficient network operation and minimizes the delay when forwarding data.

8. Claim 65, Kano teaches a method for transmitting content in a communications network, the method comprising:

(A) configuring a table (i.e. routing table 21A) to cause content be routed to a first path (i.e. a path is corresponding to a destination address for routing) in said communications network (i.e. network 1) [figure 6, col. 1, line 31-col. 2, line 25; and col. 8, lines 22-54];

(B) analyzing an elapsed time associated with transmitting content via the first path against a threshold amount of time (i.e. a predetermined value of time) [col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21]; and

(C) modifying the table to cause content to be routed in said communications network based on analysis of the elapsed time against the threshold amount of time [col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21].

Kano fails to teach content is routed over a second path; and analyzing a cost associated with transmitting content via the second path against a threshold cost; and the content to be routed to a path distinct from said second path based on analysis of the cost against the threshold cost. However, Callon, in the same field of endeavor having closely related objectivity, teaches content is routed over a second path (i.e. it is considered as an alternative path) [col. 16, lines 31-38]; and analyzing a cost (i.e. a cost calculated for a path) associated with transmitting content via the second path against a threshold cost (i.e. optimal cost of the optimal path) [col. 8, lines 1-26; col. 9, lines 1-26; col. 10, lines 32-67; col. 15, line 1-col. 17, line 26; col. 18, lines 59-65]; and the content to be routed to a path (i.e. a new path or new virtual circuit) distinct from said second path based on analysis of the cost against the threshold cost [col. 8, lines 1-26; col. 9, lines 1-26; col. 10, lines 32-67; col. 15, line 1-col. 17, line 26; col. 18, lines 59-65].



Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Callon's teachings of content is routed over a second path; and analyzing a cost associated with transmitting content via the second path against a threshold cost; and the content to be routed to a path distinct from said second path based on analysis of the cost against the threshold cost, in the teachings of Kano in routing system, for the purpose of help to manage paths in a manner that provides for efficient network operation and minimizes the delay when forwarding data.

9. Claim 66, Kano and Callon disclose the invention substantially as claimed. Callon teaches wherein the threshold cost is based at least in part on a maximum elapsed time (i.e. a threshold of timer) [Callon, col. 8, lines 1-26; col. 9, lines 1-26; col. 10, lines 32-67; col. 14, lines 30-col. 17, line 26; col. 18, lines 59-65].
10. Claim 67, Kano and Callon disclose the invention substantially as claimed. Callon teaches wherein the threshold cost is based at least in part on a delay metric [Callon, col. 8, lines 1-26; col. 9, lines 1-26; col. 10, lines 32-67; col. 14, lines 30-col. 17, line 26; col. 18, lines 59-65].
11. Claim 68, Kano and Callon disclose the invention substantially as claimed. Callon teaches wherein the threshold cost is based at least in part a performance metric

[Callon, col. 8, lines 1-26; col. 9, lines 1-26; col. 10, lines 32-67; col. 14, lines 30-col. 17, line 26; col. 18, lines 59-65].

12. Claim 73, Kano and Callon disclose the invention substantially as claimed. Callon teaches wherein the communications network comprises the Internet and wherein communication among nodes on the first path uses an Internet protocol, and communication among nodes on the second path uses at least the Internet protocol [Callon, col. 1, lines 29-38; col. 8, lines 1-26; col. 9, lines 1-26; col. 14, lines 30-col. 17, line 26].

13. Claim 77, Kano and Callon disclose the invention substantially as claimed. Kano teaches wherein a first network (i.e. network 1) comprises the first path (i.e. a path is corresponding to a destination address for routing) and a second network (i.e. network 2) [Kano, figure 6, col. 1, line 31-col. 2, line 25; and col. 8, lines 22-54]; and the second path (i.e. an alternative path) [Callon, col. 16, lines 31-38].

14. Claim 81, Kano teaches a method for transmitting content in a communications network, the method comprising:

(A) configuring a table (i.e. routing table 21A) to cause content to be routed via a first path in said communications network, said first path (i.e. a path is corresponding to a destination address for routing) having been determined

based at least in part on a timer associated with transmitting content via the first path [figure 6, col. 1, line 31-col. 2, line 25; and col. 8, lines 22-54]; and

(B) based at least in part on how much time has elapsed since said configuring in step (A), modifying the table to cause content to be routed in said communications network [col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21].

Kano fails to teach the path having been determined based on a first cost associated with transmitting content via the path; and content to be routed via a second path, said second path having been determined based at least in part on a second cost associated with transmitting content via the second path. However, Callon, in the same field of endeavor having closely related objectivity, teaches the path having been determined based on a first cost associated with transmitting content via the path [col. 8, lines 1-26; col. 9, lines 1-26; col. 10, lines 32-67; col. 15, line 1-col. 17, line 26; col. 18, lines 59-65]; and content to be routed via a second path (i.e. it is considered as an alternative path) [col. 16, lines 31-38], said second path having been determined based at least in part on a second cost associated with transmitting content via the second path [col. 8, lines 1-26; col. 9, lines 1-26; col. 10, lines 32-67; col. 15, line 1-col. 17, line 26; col. 18, lines 59-65].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Callon's teachings of the path having been determined based on a first cost associated with transmitting

content via the path; and content to be routed via a second path, said second path having been determined based at least in part on a second cost associated with transmitting content via the second path, in the teachings of Kano in routing system, for the purpose of help to manage paths in a manner that provides for efficient network operation and minimizes the delay when forwarding data.

15. Claim 82, Kano and Callon disclose the invention substantially as claimed. Callon teaches wherein the second path is selected based at least in part on the then-current state of the network [Callon, col. 8, lines 1-26; col. 9, lines 1-26; col. 10, lines 32-67; col. 15, line 1-col. 17, line 26; col. 18, lines 59-65].

16. Claim 85, Kano teaches a method for transmitting content in a communications network, the method comprising:

(A) configuring a table (i.e. routing table 21A) to cause content to be routed to a first node (i.e. a first destination address or port), a first network (i.e. network 1) comprising said first node; and then, after a specified amount of time has passed since said configuring [figure 6, col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21],

(B) modifying the table to cause content to be routed to a second node (i.e. a second or different destination address or port), a second network (i.e.

network 2) comprising said second node (i.e. second or different destination address or port), and said second node being distinct from the first node [figure 6, col. 1, line 31-col. 2, line25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21].

wherein the communications network comprises protocol and wherein communication among nodes on the first network uses a protocol, and communication among nodes on the second network uses at least the protocol [col. 1, line 31-col. 2, line25; and col. 8, line 22-col. 9, line 24; col. 10, line 65-col. 11, line 21].

Kano fails to teach Internet and communication among the nodes on the networks uses an Internet protocol. However, Callon, in the same field of endeavor having closely related objectivity, teaches Internet and communication among the nodes on the networks uses an Internet protocol [Callon, col. 1, lines 29-38; col. 8, lines 1-26; col. 9, lines 1-26; col. 14, lines 30-col. 17, line 26].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Callon's teachings of Internet and communication among the nodes on the networks uses an Internet protocol, in the teachings of Kano in routing system, for the purpose of help to manage paths in a manner that provides for efficient network operation and minimizes the delay when forwarding data.

17. Claims 61,63,74,78 are corresponding apparatus claims of method claims 57,58,73,77. Therefore, they are rejected under the same rationale.

18. Claims 75,79 are corresponding method claims of method claims 73,77. Therefore, they are rejected under the same rationale.

19. Claims 76,80 are corresponding method claims of method claims 73,77. Therefore, they are rejected under the same rationale.

20. Claims 56,62,83-84,86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano and Callon as applied to claims 55, 59, 81, 85 above, and further in view of McCanne (US 6,611,872).

21. Claim 56, Kano and Callon are relied upon for the disclosure set forth in the previous rejection. Kano teaches wherein the first path is a frame-switched forwarding path [figure 6, col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24].

Kano and Callon fail to teach an overlay forwarding path. However, McCanne, in the same field of endeavor having closely related objectivity, teaches an overlay forwarding path [abstract; col. 6, line 65-col. 7, line 30; col. 16, lines 30-45].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated McCanne's teachings of an overlay forwarding path, in the teachings of Kano and Callon, for the purpose of provide a widely deployed communication protocols and procedures to achieve efficient transfer or routing of information.

22. Claim 62 is corresponding apparatus claim of method claim 56. Therefore, it is rejected under the same rationale.

23. Claim 83, Kano and Callon disclose the invention substantially as claimed. Kano teaches wherein the first path comprises at least one node (i.e. at least one destination address) [figure 6, col. 1, line 31-col. 2, line 25; and col. 8, line 22-col. 9, line 24].

Kano and Callon fail to teach overlay node. However, McCanne, in the same field of endeavor having closely related objectivity, teaches overlay node (i.e. overlay router) [abstract; col. 6, line 65-col. 7, line 8; col. 16, lines 30-45].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated McCanne's teachings of overlay node, in the teachings of Kano and Callon, for the purpose of provide a widely deployed communication protocols and procedures to achieve efficient transfer or routing of information.

24. Claim 84, Kano and Callon disclose the invention substantially as claimed. Callon teaches wherein the second path comprises at least one node (i.e. router) [figures 1 & 2A-B].

Kano and Callon fail to teach overlay node. However, McCanne, in the same field of endeavor having closely related objectivity, teaches overlay node (i.e. overlay router) [abstract; col. 6, line 65-col. 7, line 8; col. 16, lines 30-45].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated McCanne's teachings of overlay node, in the teachings of Kano and Callon, for the purpose of provide a widely deployed communication protocols and procedures to achieve efficient transfer or routing of information.

25. Claim 86, Kano and Callon are relied upon for the disclosure set forth in the previous rejection. Callon teaches wherein a first path comprises the first node and wherein a second path comprises the second node [figures 1 & 2A-B].

Kano and Callon fail to teach overlay paths. However, McCanne, in the same field of endeavor having closely related objectivity, teaches overlay paths [abstract; col. 7, lines 20-31].

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated McCanne's teachings of overlay paths, in the teachings of Kano and Callon, for the purpose of provide a



widely deployed communication protocols and procedures to achieve efficient transfer or routing of information.

### ***Response to Arguments***

Applicant's arguments filed 6/4/10 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 55-68,73-86 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH-CHAU NGUYEN whose telephone number is (571)272-4242. The examiner can normally be reached on 7AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, VIVEK SRIVASTAVA can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/MIVEK SRIVASTAVA/

Supervisory Patent Examiner, Art Unit 2445